CALIFORNIA High-Speed Rail Authority

CHANGE ORDER (CO)

CO No.: 00009

TITLE: Revised Shear Wave 500-ft Boring **DATE:** 10/14/2014

PROJECT: Construction Package No. 1 **CONTRACT NO:** HSR 13-06

CONTRACTOR: Attn: Jim Laing
Tutor Perini/Zachry/Parsons, a Joint Venture
1401 Fulton Street
Suite 400
Fresno, CA 93721

DESCRIPTION OF CHANGE:

Extra Work @ Agreed Lump Sum:

Compensate the Contractor for performing the work and provide the required deliverables as outlined on Sheets 1 and 2 of Attachment A to this Change Order which includes biological and cultural resource monitoring, geotechnical investigation, soil sampling, and site specific response at the Fresno and San Joaquin Rivers.

Biological and Cultural Resource Monitoring
Conduct biological and cultural resource monitoring at the San Joaquin River when boring work is ongoing. The duration of this work is estimated to be six days at each location. This work shall comply with all permitting requirements of the Contract and will include the following activities:
(1) A pre-construction Survey and Report for the San Joaquin River and Fresno River
  (a) San Joaquin Kit Fox Biologist
(2) Monitoring and Reporting San Joaquin River
  (a) Cultural Resource Monitor
  (b) Native American Monitor
  (c) San Joaquin Kit Fox Biologist
(3) Monitoring and Reporting San Joaquin River
  (a) San Joaquin Kit Fox Biologist

The following are excluded from this Change Order:
(1) Additional Right-of-Way (if required)
(2) ICE and V&V Review (if required)
(3) Cultural Resource Monitor (Pre-con Survey and Report at both locations)
(4) Senior Biological Monitor (SWHA) (Pre-con Survey and Report at both locations)
(5) Cultural Resource Monitor (Monitoring and Reporting at Fresno River)
(6) Senior Biological Monitor (SWHA) (Monitoring and Reporting at Fresno River)

For this work the Contractor shall receive and accept the agreed lump sum of $275,227.04. This sum constitutes full and complete compensation for providing all labor, material, equipment, tools and incidentals including all markups by reason of this change.

No additional time is warranted for this work as this work does not affect the controlling item of work.

PCO	Payment Item	Description	Quantity	Units	Unit Price	Net Amount	Time Adj. (Days)
	00001	Geotechnical Borings at San Joaquin River and Fresno River	1.0	LS	$238,074.35	$238,074.35	0
	00002	Biological and Cultural Resource Monitoring	1.0	LS	$37,152.69	$37,152.69	0
					Total:	**$275,227.04**	**0**

ATTACHMENTS: Attachment A to Change Order 00009: Directive Letter DL-00017-R1 (July 23, 2014) - 2 Pages

Contractor	California High Speed Rail Authority		
Acceptance by	Submitted by	Recommended by	Approved by

CALIFORNIA High-Speed Rail Authority

CHANGE ORDER (CO)

CO No.: 00009

TITLE: Revised Shear Wave 500-ft Boring **DATE:** 10/14/2014

PROJECT: Construction Package No. 1 **CONTRACT NO:** HSR 13-06

Release of Claims

Except as modified by this Change Order, all terms and conditions of the Contract, as previously modified, remain unchanged and in full force and effect. The parties agree that this Change Order is a final and equitable adjustment of the Contract time and Contract amount and constitutes a mutual accord and satisfaction of all claims, current or future, of whatever nature caused by or arising out of the facts and circumstances surrounding this Change Order including, but not limited to, direct, indirect and consequential costs; additional time for performance; and the impact of the modifications specified in this Change Order, alone or taken with other changes, on the unchanged Work.

Contractor's Sworn Certification

By executing this Change Order for the Contractor below, the undersigned for the Contractor certifies as true, under penalty of perjury (under the laws of California, executed in Fresno, California), as follows:

This Change Order is made in good faith and in accordance with the terms of the Contract.

The amount of time and/or compensation requested accurately reflects the appropriate adjustments and includes all known and anticipated impacts or amounts that may be incurred as a result of the event or matter giving rise to such proposed change.

The Contractor has no reason to believe and does not believe that the factual basis for this Change Order is falsely represented.

The Contractor has investigated the basis for each Subcontractor claim and has determined that each such claim is justified as to entitlement and amount of money and/or time requested and has no reason to believe and does not believe that the factual basis for the Subcontractor's claim is falsely represented.

Subcontractor's Sworn Certification(s):

Attached as _____ [indicate "none" if no such Subcontractors are involved] are sworn certifications from each Subcontractor involved in the Work or event contemplated by this Change Order in the form above.

Tutor Perini/Zachry/Parsons, a Joint Venture

Acceptance by		
Signature	Jim Laing - Project Manager/Director	Date 10/14/2014

California High-Speed Rail Authority

Submitted by		
Signature	John D. Foster - Project Controls Oversight Manager	Date 10/14/2014
Recommended by		
Signature	Hugo Mejia - Design Construction Manager	Date 10/17/14
Approval by		
Signature	Ofelia Alcantara - Director of Design and Construction	Date 10/21/14

Contractor	California High Speed Rail Authority		
Acceptance by	Submitted by	Recommended by	Approved by

CALIFORNIA High-Speed Rail Authority

DIRECTIVE LETTER (DL)
(Issued per General Provisions 17.1.1)

DL No.: DL-00017-R1
CN No.: CN-

TITLE: Revised Shear Wave **DATE:** 07/23/2014

PROJECT: Construction Package No. 1 **CONTRACT No.:** HSR 13-06

TO: Attn: Jim Laing
TUTOR PERINI/ZACHRY/PARSONS JV
1401 Fulton Street
Suite 400
Fresno, CA 93721

Attachment A to CCO# 00009
Page 1 of 2
Design & Construction Manager: Hugo Mejia
Design Build Contractor: TPZP JV
Project: CP-1
Contract: HSR 13-06

ISSUED FOR:

[X] Direction to Proceed as per Revised Directive below prior to executed Change Order

[X] Change Order Proposal to be submitted by: 9-2-14 (Date)

[ ] Proceed per Contract Provisions (as specified below) – no change authorized

DIRECTIVE:

Tutor Perini Zachry Parson Joint Venture (TPZP) is hereby directed to replace the language in the 3rd bullet titled, "Borings", of HSR 13-06 Book 3, Part C, Subpart 1, Design Criteria Section 10.A.2.4.4, with the following:

Conduct a site specific site response analysis using geotechnical data and shear wave velocity measurements at the Fresno River and San Joaquin River as prescribed in the following sections.

Geotechnical Investigation

The Contractor shall drill a 500-ft deep boring with PS seismic suspension downhole logging. The boring can be terminated at a shallower depth if the shear wave velocity reaches 760 m/s. The shear wave velocity of 760 m/s shall extend at least 20 feet below the depth where it is first encountered. The borings shall be performed as follows:

- At the Fresno River, locate the boring within 20 feet of the center line of the river at the center line of the HST alignment.
- At the San Joaquin River, locate the boring inside of the ordinary high water mark within the river channel at the center line of the HST alignment.
- Collect SPT data and soil samples at a 5-ft interval from the ground surface to 100 feet, and at a 10-ft interval from 100 to 200 feet. Collect soil samples at a 20-ft interval from 200 feet to 500 feet. Locate the elevation of the ground water table if encountered during drilling.
- Perform PS seismic suspension downhole logging to a depth of 500 feet (or shallower depth according to the procedure mentioned above).
- Backfill the boring with cement grout once the validity and integrity of the PS logging and corresponding primary and shear wave velocity measurements have been confirmed by the Authority.
- Collect both P-wave and S-wave velocity profiles.

Soil Sample Testing

- Lab testing for samples collected within the top 100 feet shall consist of moisture content, soil unit weight, gradation (and #200 sieve wash), and Atterberg Limits Tests at 10 ft. intervals and at any depth where a new soil layer is encountered.

TITLE:	Revised Shear Wave	**DATE:**	07/23/2014
PROJECT:	Construction Package No. 1	**CONTRACT No.:**	HSR 13-06

- From 100 feet to 200 feet, lab testing shall consist of moisture content, soil unit weight, gradation (and #200 sieve wash), and Atterberg Limits Tests at 20 ft. intervals, and at any depth where a new soil layer is encountered.
- From 200 feet to bottom of boring, lab testing shall consist of moisture content, soil unit weight, gradation (and #200 sieve wash), and Atterberg Limits Tests at 40 ft. intervals and at any depth where a new soil layer is encountered.

Deliverables

The following documents shall be developed by TPZP and provided to the Authority:
(1) Boring Log (GInt) with standard soil classification, descriptions, and lab test data versus depth
(2) Summary of laboratory testing results with individual testing logs
(3) Description of the PS seismic suspension downhole logging with equipment set up in addition to profiles of shear and primary wave velocities with depth

Site Specific Site Response Analysis

TPZP shall perform a site specific site response analysis using the site specific geotechnical data, shear wave velocity measurements and reference rock elevation. (The Authority will provide TPZP rock outcrop ground motions with corresponding spectrally matched time series.) The TPZP site specific site response analysis deliverables shall include:

(1) Characterization of site properties
(2) Statement of analysis methodology
(3) Presentation of the results for each component (H1/H2) of seven input ground motions;
   - Response spectra at different depths of interest (i.e., reference rock level, pile tip, mid depth of the pile and ground surface)
   - Acceleration Time Histories at different depths of interest
   - Velocity Time Histories at different depths of interest
   - Displacement Time Histories at different depths of interest
   - Displacement (or shear strain) Profile for the entire depth
   - Maximum shear stress profile with depth

Attachment A to CCO# 00009
Page 2 of 2
Design & Construction Manager: Hugo Mejia
Design Build Contractor: TPZP JV
Project: CP-1
Contract: HSR 13-06

Issued by: California High-Speed Rail Authority

Signature: 7/23/14

Name/Title: **Ofelia P. Alcantara / Director of Design & Construction**

DLN FOR RICK STEAD